[Document Name] *CLAIMS*

WHAT IS CLAIMED IS:

[Claim 1] A semiconductor substrate comprising:

a basis material made of silicon, having a surface with an uneven part formed thereon; and

a plurality of island parts made of silicon, electrically insulated from said basis material as well as from each other above a convex part of said basis material.

[Claim 2] The semiconductor substrate according to Claim 1, further comprising

an insulation component formed between said basis material and said island parts and composed of two layers.

[Claim 3] The semiconductor substrate according to Claim 1, wherein

said plurality of island parts are formed in a single plane generally parallel to a main surface of said basis material.

[Claim 4] The semiconductor substrate according to Claim 1, wherein

said plurality of island parts are formed in a plurality of planes generally parallel to the main surface of said basis material, and formed in a multi-stage above the convex part of said basis material.

[Claim 5] The semiconductor substrate according to Claim 4, further comprising

an insulation component formed between said island parts laminated on top of each other and composed of two layers.

[Claim 6] The semiconductor substrate according to any one of Claims 1 to 5, wherein

said plurality of island parts are buried in the insulation component provided on said basis material.

[Claim 7] The semiconductor substrate according to Claim 6, wherein

said insulation component is made of silicon oxide.

[Claim 8] The semiconductor substrate according to Claims 1 to 7, wherein

distances between a main surface of said basis material facing to said island parts and main surfaces of said island parts facing to said basis material are different from each other.

[Claim 9] The semiconductor substrate according to Claim 8, wherein

the semiconductor substrate is composed of an island part located at the distance as a first distance and an island part located at the distance as a second distance.

[Claim 10] The semiconductor substrate according to any one of Claims 1 to 7, comprising

an island part made of silicon, being in contact with said basis material and electrically insulated from the island parts which are electrically insulated from said basis material.

[Claim 11] The semiconductor substrate according to Claim 8 or 10, wherein:

said plurality of island parts are formed in a multi-stage above each of the convex parts; and

the multi-stage island parts are different from each other in thickness.

[Claim 12] The semiconductor substrate according to any one of Claims 1 to 7, wherein

the distances between the main surface of said basis material facing to said island parts and the main surfaces of said island parts facing to said basis material are 3 nm to 200 nm.

[Claim 13] The semiconductor substrate according to any one of Claims 1 to 7, wherein

the distances between the main surfaces of said island parts facing to said basis

material and the main surfaces of said island parts located on an opposite side of said basis material are 2 nm to 150 nm.

[Claim 14] The semiconductor substrate according to any one of Claims 1 to 13, wherein

said island parts are formed as a strained silicon layer.

[Claim 15] A semiconductor device comprising the semiconductor substrate according to any one of Claims 1 to 14.

[Claim 16] A manufacturing method for a semiconductor substrate, comprising the steps of:

preparing a basis material made of silicon;

forming a silicon germanium layer on said basis material;

forming a silicon layer on said silicon germanium layer;

forming a silicon oxide layer on said silicon layer;

removing said silicon germanium layer to said silicon oxide layer by photolithography and etching in a direction of thickness as well as removing a surface portion of said basis material, to form a plurality of openings;

forming an additional silicon oxide layer so as to cover said silicon oxide layer and inner surfaces of said plurality of openings;

removing said silicon germanium layer to said additional silicon oxide layer in a direction of thickness by photolithography and etching as well as removing an upper surface portion of said basis material, to form a trim-like stacked structure;

selectively removing said silicon germanium layer by etching;

performing a thermal oxidation treatment on said stacked structure to oxidize a surface portion of said basis material and a surface portion of said silicon layer facing to said basis material; and

forming an insulator film on a thermally oxidized silicon layer of the surface portion of said basis material and performing a flat treatment thereon.

[Claim 17] The manufacturing method for a semiconductor substrate according to Claim 16, comprising the step of:

between the thermal oxidation treatment and the flat treatment, performing an annealing treatment on said stacked structure, and bonding an oxidized surface portion of said basis material to an oxidized surface portion of said silicon layer by softening and fluidizing said additional silicon oxide layer, thereby forming a thermally oxidized silicon layer.

[Claim 18] The manufacturing method for a semiconductor substrate according to Claim 16, further comprising the steps of:

between the thermal oxidation treatment and the flat treatment;

selectively removing said oxide film in an area corresponding to a predetermined island part;

forming an oxide film through an thermal oxidation treatment on a surface portion of said basis material and a surface portion of said silicon layer facing to said basis material in areas corresponding to all of the island parts; and

performing an annealing treatment on said stacked structure, and bonding an oxidized surface portion of said basis material to an oxidized surface portion of said silicon layer by softening and fluidizing said additional silicon oxide layer, thereby forming a thermally oxidized silicon layer.

[Claim 19] The manufacturing method for a semiconductor substrate according to Claim 16, further comprising the steps of:

between the thermal oxidation treatment and the flat treatment;

selectively removing said oxide film in an area corresponding to a predetermined

island part; and

performing an annealing treatment on said stacked structure, and bonding an oxidized surface portion of said basis material to an oxidized surface portion of said silicon layer by softening and fluidizing said additional silicon oxide layer, thereby forming a thermally oxidized silicon layer and bonding an island part corresponding to a removed oxide film to said basis material.

[Claim 20] A manufacturing method for a semiconductor substrate, comprising the steps of:

preparing a basis material made of silicon:

alternately laminating a plurality made of silicon germanium layers and a plurality of silicon layers on said basis material so that said silicon germanium layer is located at a bottom and said silicon layer is located at a top;

forming a silicon oxide layer on a silicon layer located at the top;

removing said silicon germanium layer located at the bottom to said silicon oxide layer by photolithography and etching in a direction of thickness as well as removing a surface portion of said basis material, to form a plurality of openings;

forming an additional silicon oxide layer so as to cover said silicon oxide layer and inner surfaces of said plurality of openings;

removing the silicon germanium layer located at the bottom to said additional silicon oxide layer by photolithography and etching in a direction of thickness as well as removing an upper surface portion of said basis material, to form a trim-like stacked structure;

selectively removing said plurality of silicon germanium layers by etching;

performing a thermal oxidation treatment on said stacked structure to oxidize a surface portion of said basis material and a surface portion of said plurality of silicon layers;

and

forming an insulator film on a thermally oxidized silicon layer of the surface portion of said basis material and performing a flat treatment thereon.

[Claim 21] The manufacturing method for a semiconductor substrate according to Claim 20, further comprising the step of

between the thermal oxidation treatment and the flat treatment,

performing an annealing treatment on said stacked structure, and bonding an oxidized surface portion of said basis material to an oxidized surface portion of said silicon layer facing to said basis material by softening and fluidizing said additional silicon oxide layer and bonding oxidized surface portions of adjacent plurality of silicon layers to each other, to form a thermally oxidized silicon layer.

[Claim 22] The manufacturing method for a semiconductor substrate according to Claim 20, further comprising the steps of:

between the thermal oxidation treatment and the flat treatment;

selectively removing said oxide film in an area corresponding to a predetermined island part to be laminated;

forming an oxide film through a thermal oxidation treatment on a surface portion of said basis material and a surface portion of said silicon layer facing to said basis material in areas corresponding to all of the island parts; and

performing an annealing treatment on said stacked structure, and bonding an oxidized surface portion of said basis material to an oxidized surface portion of said silicon layer facing to said basis material by softening and fluidizing said additional silicon oxide layer, to form a thermally oxidized silicon layer.

[Claim 23] The manufacturing method for a semiconductor substrate according to Claim 20, comprising further comprising the steps of:

between the thermal oxidation treatment and the flat treatment,

selectively removing said oxide film in an area corresponding to a predetermined island part to be laminated; and

performing an annealing treatment on said stacked structure, bonding an oxidized surface portion of said basis material to an oxidized surface portion of said silicon layer facing to said basis material by softening and fluidizing said additional silicon oxide layer to form a thermally oxidized silicon layer, and bonding a plurality of island parts corresponding to a removed oxide film to each other and bonding, to said basis material, the island parts on the basis material side corresponding to a removed oxide film.

[Claim 24] The manufacturing method for a semiconductor substrate according to any one of Claims 16 to 23, further comprising the step of including a dopant in said plurality of silicon germanium layers.

[Claim 25] The manufacturing method for a semiconductor substrate according to Claim 24 wherein said dopant is boron (B).

[Claim 26] The manufacturing method for a semiconductor substrate according to any one of Claims 16 to 25, wherein

a concentration of germanium in said silicon germanium layer is 5% to 50.

[Claim 27] The manufacturing method for a semiconductor substrate according to any one of Claims 16 to 26, wherein

said silicon germanium layer is removed using a nitrate fluoride based etchant.

[Claim 28] The manufacturing method for a semiconductor substrate according to any one of Claims 16 to 27, wherein

said thermal oxidation treatment is a wet process.

[Claim 29] The manufacturing method for a semiconductor substrate according to any one of Claims 16 to 28, wherein

said annealing treatment is performed at 850 deg. C to 1350 deg. C.

[Claim 30] The manufacturing method for a semiconductor substrate according to any one of Claims 16 to 29, wherein

said insulator film formed on the thermally oxidized silicon layer of the surface portion of said basis material is made of silicon oxide.

[Claim 31] The manufacturing method for a semiconductor substrate according to any one of Claims 16 to 30, wherein

said silicon layer is formed as a strained silicon layer.

[Claim 32] A manufacturing method for a semiconductor device comprising the manufacturing method according to any one of Claims 16 to 31.